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ABSTRACT

The Adaptive and Corrective Program of Physical Education (ACPPE) of Pawtucket, Rhode Island, was developed for the identification, medical diagnosis, and prescriptive treatment of students who have disabilities that preclude their participation in the schools' required physical education (PE) activities. The ACPPE served high school students are identified under five categories: orthopedic-skeletal deformities, respiratory-breathing complications, sensory-nerve problems, learning handicaps, and other conditions. The ACPPE curriculum comprised four elements--medical diagnosis and prescriptive screening, a program of modified and remedial PE activities, a health and nutrition program, and individualized instruction with peer student assistance. The program was evaluated in terms of the four program objectives. Evaluation questions were asked regarding assessment of program activities, project impact, communications, information gathering, cooperation/collaboration, and additional assessment of program activities concerns. The ACPPE designed and delivered a program of modified physical education activities to meet students' needs in accordance with the individualized education program data base developed for each of the participants. Evidence for the statistical and educational significance of the program's activities as well as the benefits that the student participants received was produced. Appendixes include a program introductory letter and program activities recommendation form. (SB)

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Pawtucket School Department's

1979-80

Title IV-C, Adaptive and Corrective Program of Physical Education

Final Evaluation Report

prepared by

Steven Arnoff

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Introduction

The Adaptive and Corrective Program of Physical Education (ACPPE), developed by the Pawtucket School Department, has been funded by the Rhode Island Department of Education under Title IV-C of the Elementary and Secondary Education Act, as amended, 1978. Implemented during the 1977-78 school year, the Shea High School Program has provided services to students for three years while the Tolman High School Program has completed its initial year, 1979-80, of providing services.

The program is directed to the identification, medical diagnosis and prescriptive treatment of students who have disabilities that preclude their participation in the schools' required physical education (PE) activities. Program advocates consider the adapted physical education curriculum a means by which students with disabilities can balance the sedentary portion of their academic education with a program of physical activities designed to maximize each individual's abilities and attitudinal perspective with regard to his or her respective handicap(s). Concurrently, the teacher is provided with the unique opportunity to assist students with physical disabilities.

Under contract to the Pawtucket School Department, Educational Consulting Services (ECS) has conducted an evaluation study of the program. The overall purpose of the study is to provide useful programmatic and statistical information to decision-makers regarding the operations and student outcomes of the ACPPE.

This report is organized in accordance with the Rhode Island Department of Education's ESEA Title IV-C LEA Final Evaluation Report Requirements and

the areas of information needs identified by the program staff, with ECS's assistance. Chapter I identifies the prospective student participant pool and selection procedures, admittance categories and the number of students participating in the program. Chapter II describes the design and conduct of the evaluation study. Chapter III addresses the program objectives and results. In Chapter IV the specific information needs and major evaluation questions identified by the program staff are presented. Data sources and data collection procedures are described and evaluation findings are presented. Chapter V provides a synopsis of the major findings and implications for future program development. Chapter VI is an executive summary section. Finally, the appendices contain instrumentation and resource material used in preparing the evaluation.

This evaluation report provides summative data regarding the Shea School's three-year program and formative information about the 1979-80 ACPPE implementation at the Tolman School. Therefore, this report is addressed to the operation of and student performance attributable to the ACPPE. Together the summative and formative information presented clarifies and strengthens the framework for future Adaptive Physical Education (APE) program development activities.

Chapter I

A. Population

Student Participant Pool

The ACPPE operates in Pawtucket, Rhode Island, a city of approximately eighty thousand people. The city's two public high schools, Shea and Tolman, have a combined enrollment of about twenty-two hundred tenth, eleventh and twelfth grade students. The eligibility of students for the program is based

upon a physician's written request to excuse a high school student from the required PE activities. During this school year, 1979-80, a total of seventy students participated in the Shea High School ACPPE while forty students participated in the Tolman High School program. Thus, the 1979-80 program served approximately 5 percent of the Pawtucket School Department's high school population.

Student Selection Procedures

The ACPPE is considered to be an alternative to the school's required PE program. Students may be identified and referred for admittance into this program by their attending physician, a school physician, a school nurse, a guidance counselor, a classroom teacher, a PE teacher or an adaptive physical education (APE) specialist. Again, eligibility for and admittance into the ACPPE is dependent on the school's receipt of a physician's written request to excuse or exempt the student from the required PE activities.

For the most part, the PE teacher will initially receive the physician's note requesting that a student be excused from the regularly scheduled (required) PE class. The PE teacher, in turn, submits the physician's note either to the school's PE Department chairperson or the APE teacher.

The APE teacher, upon receiving the referral, will schedule a meeting with the student to describe and discuss the program's components. An introductory letter describing the ACPPE (Appendix A) and an activities recommendation form (Appendix B) is sent, depending on the circumstances of each case, to the student's physician or home to the parents.

The activities recommendation form (Appendix B) is to be filled out and signed by a qualified physician. It constitutes a student diagnostic and prescriptive profile data base. The form requests information about the student's

particular condition(s), the general and individual PE activities the student may safely participate in, and the type and degree of exercise permissible.

In general, a school doctor is available to provide physical examinations to all tenth graders, to all students who wish to have an annual physical check-up and to students entering Shea or Tolman High Schools from other schools outside of the Pawtucket School District. Of course, students may go to their own physicians for their physical exam; all ACPPE participants, however, must have a yearly physical exam in addition to the initial screening procedure.

Student referrals may also be made during the school year by a PE teacher who observes a physical problem, such as lack of motor coordination, weak physical condition or obesity; by a school physician who notices a specific problem or defect at the required periodic school physical check-ups; a school nurse when students entering either of the two schools have specific problems or needs or when the specific circumstances of an individual student warrant a change in program; and by a guidance counselor or teacher who has been approached by a student with a particular sensitivity that makes coping with the required PE program difficult. The screening procedures are the same for all students referred to the program. At a minimum, the screening procedures include a physician's written request to excuse a student from the required PE class and an activities recommendation form completed and signed by the physician. Contact and a continuous dialogue with individual physicians is made by the program staff when necessary.

The program director is responsible for scheduling students into the ACPPE. A student's program is often changed to accommodate the APE class. This necessitates discussions with the Dean of the school, responsible for student program scheduling, the student's guidance counselor and the principal.

Thus a team of medical and educational personnel are involved in the screening of each individual case, the placement of individuals into the program, and the exact activities and exercises recommended for each student.

Student Selection Procedure Modifications

These screening procedures, by their very nature, define two types of student populations eligible for the ACPPE's services. First are the permanent participants - that is, students who have disabilities that preclude their participation in the required PE program at any time. These full-time students are the program's major concern and it is on these students that this evaluation study is focused.

Second, the screening procedures identify a transient student population. The transient student is one who ordinarily participates in the required PE activities, but because of injury, illness or special needs requires a modified program like the ACPPE. Such a transient student, then, would participate in the ACPPE on a temporary basis, returning to the required or regularly scheduled PE classes after a specified period of time.

Although the ACPPE accommodated transient as well as full-time participants in its 1977-78 and 1978-79 program, the transient student was excluded from the 1979-80 program. Further, at the request of the Pawtucket School Department this final evaluation study focused only on those students who participated in the ACPPE on a full-time basis during the three years the program has provided services; 1977-78, 1978-79 and 1979-80.

The rationale for excluding the transient students from the 1979-80 program is composed of two considerations. The major consideration was the program's financial constraints and the accessibility of available services. There

were enough full-time students to satisfy the enrollment allotment for the 1979-80 program.

Also, the transient students presented complications to the program's curriculum design, teaching strategies and assessment procedures. Therefore, the transient students were not admitted into the ACPPE during the 1979-80 program year, however, their participation in the program is addressed further in the program participation section of this chapter.

Admittance Categories

Students admitted into the ACPPE are identified by the five following categories.

1.0 Orthopedic - skeletal deformities

A motor or postural disability or limitation which impedes the individual's motor function ability. Postural abnormalities are imbalances in the body's muscle tone which result in inefficient and ineffective body mechanics. Congenital deformities, multiple sclerosis, muscular dystrophy, post-operative and convalescent patients are included in this category.

2.0 Respiratory - breathing complications

A breathing problem which results in a limited ability to expel air. This category includes asthma, allergies, emphysema and lung diseases.

3.0 Sensory - nerve problems

A physical handicap which impedes the functioning of one or more of the senses including blindness and sight impairment, deafness and hearing impairment, speech impediments and autism.

4.0 Learning handicaps

This category includes students with minimal learning disabilities, developmental impairment and brain damage due to injury or illness.

5.0 Other conditions

- 5.1 Gynecology problems
- 5.2 Diabetes (controlled)
- 5.3 Mononucleosis
- 5.4 Kidney disorders
- 5.5 Epilepsy (controlled)
- 5.6 Planter warts
- 5.7 Gastritis
- 5.8 Cardiac and heart disorders
- 5.9 Skin disorders
- 5.10 Eczema
- 5.11 Obesity
- 5.12 Underweight - strengthening
- 5.13 Hemophilia and bleeding disorders
- 5.14 Hepatitis
- 5.15 Diabetes (uncontrolled)
- 5.16 Cystic Fibrosis
- 5.17 Cerebral Palsy
- 5.20 Concussion
- 5.21 Anxiety
- 5.22 Clots
- 5.23 Ulcers

5.24 Post-operative

5.25 Arthritis

Categories 5.18 and 5.19 have been eliminated.

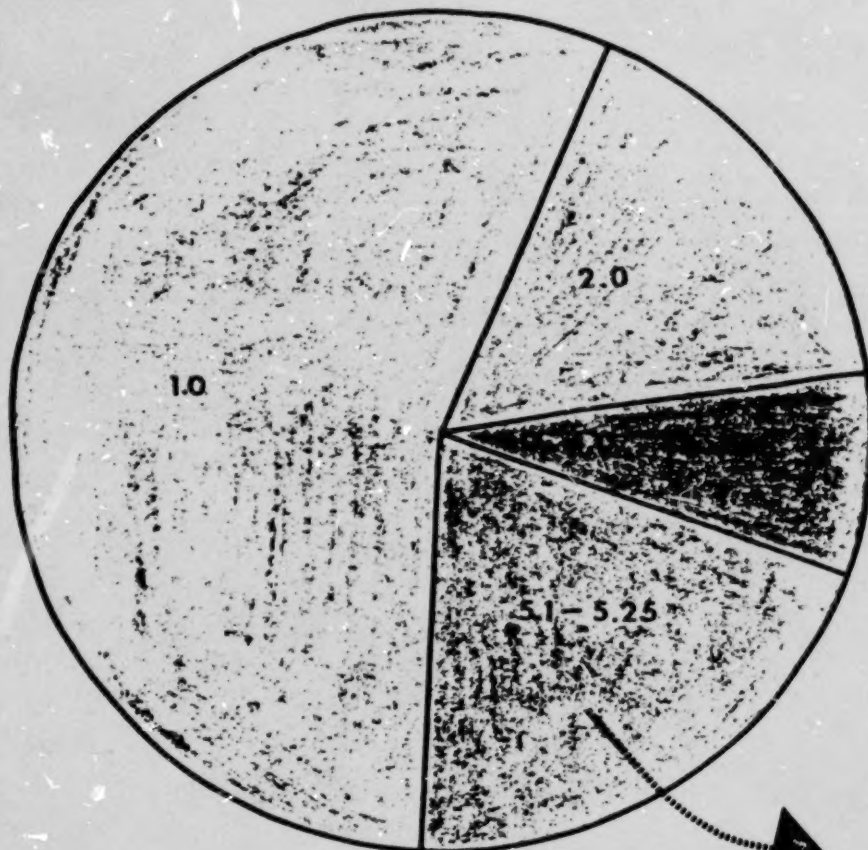
Program Participation

A total of five hundred and three students have participated in the ACPPE over the three years the program has operated, 1977 through 1980. Many of the students assigned to the program, especially during the 1977-78 and 1978-79 school years, were transient or temporary participants that returned to the regularly scheduled (required) PE classes during the school year.

For example, of the two hundred and forty-three 1977-78 participants thirty-five were full-time (all year) participants and two hundred and eight were temporary or transient participants. One hundred and fifty students, eighty-one full-time and sixty-nine transient, participated during 1978-79. Since thirty-five of the full-time participants in the 1978-79 program had also participated in the 1977-78 program, forty-six additional full-time participants joined the ACPPE during 1978-79. A total of fifty-nine additional full-time students joined the program this 1979-80 school year; nineteen at Shea and forty at Tolman High Schools, respectively. Again, the 1979-80 ACPPE enrollment totaled one hundred ten student participants, seventy at Shea High School and forty at Tolman High School.

A majority (55%) of the one hundred forty full-time students that participated in the program during the 1977 through 1980 school years have been diagnosed and placed in the ACPPE because of orthopedic problems (Figure 1). Respiratory problems account for 13 percent and learning

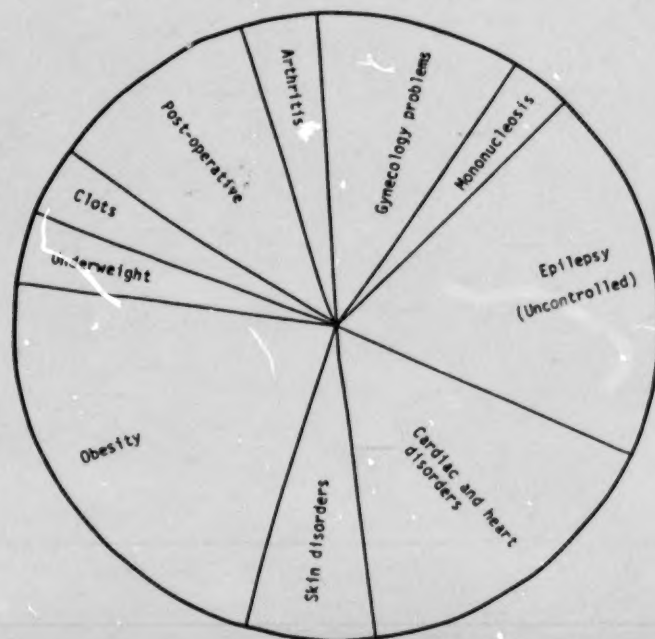
Figure 1
Percentage of ACPPE Participants by Admittance Category



Key:

- 1.0 Orthopedic Problems 55%
- 2.0 Respiratory Problems 13%
- 3.0 Sensory Problems 0%
- 4.0 Learning Problems 8%
- 5.0 Other Problems 24%
- 5.1 Gynecology 10%
- 5.3 Mononucleosis 3%
- 5.5 Epilepsy (uncontrolled) 19%
- 5.8 Cardiac and heart disorders 16%
- 5.9 Skin disorders 7%
- 5.11 Obesity 23%
- 5.12 Underweight-strengthening 3%
- 5.22 Clots 3%
- 5.24 Post-operative 13%
- 5.25 Arthritis 3%

Categories of Other Problems



handicaps comprise 8 percent of the students. The program has not received any student with sensory disabilities. A smaller circle in the lower right portion of Figure 1 explains the type and amount of the other conditions category, which comprises 24 percent of the program's participants.

I. B. Program Description

Rationale

The ACPPE is innovative in that there is a cooperative effort by the school, the program staff, appropriate medical agencies, and physicians. These usually individual services are being combined into one common service in order to enhance the physical and mental health of the participating students and to significantly reduce the number of students who are excused from participating in the school's required PE activities.

It is necessary to note that the intent of the adapted program is to provide physical education activities for every student attending school and to eliminate unwarranted excuses. The ACPPE, then, is composed of two specific components: one of modified physical education activities and the other of remedial physical education activities.

Summarily, the Pawtucket School Department's ACPPE is providing specialized services for students with disabilities who would otherwise be excused from participation in the required PE program. Students may be identified for participation in the ACPPE by a school nurse, a doctor, a physical education teacher, a guidance counselor, a classroom teacher or an adaptive physical specialist. Through the entire program, individual student counseling is provided by the project staff, and medical and educational personnel familiar with the students' special needs.

Program Needs and Intentions

Three types of needs which this program addresses are explicated in the ACPPE proposal. Foremost is the need for all students to participate in a program of physical activities that develop and maintain a level of fitness necessary to promote personal and social well-being. Pawtucket School Department records document a considerable number of high school students who have been granted medical deferments from the school's required PE program over the previous school years.

During the 1975-76 school year, for example, one hundred and seventy-five students were unable to participate in PE activities due to various medical disabilities while two hundred forty students submitted PE program medical deferment letters for the 1976-77 school year. Students not participating in the PE program because of medical deferments before the availability of the ACPPE were assigned to independent study and required to complete a research paper on a physical education topic. It is the intent of the ACPPE to reduce the quantity of medical deferments from the required PE program and to provide a modified and remedial program of activities for students with disabilities that preclude their participation in the required PE program.

Second, there is a need for students to acquire an understanding of and knowledge about the concept of good health. This includes the complementary and cumulative dimensions of physical fitness training and proper health practices.

The Pawtucket School Department, in compliance with Title 16, Chapter 21, Number 7 of the "Rhode Island Laws Relating to Education," has a health and nutrition program approved by the State Director of the Department of Health and the State Commissioner of Education. This health program's design

incorporates health topics into several discipline area curricula. At Shea High School, for instance, child development, home nursing care and nutrition are a part of the Home Economics curriculum, Physical Science includes physiology and biology is the purview of the General and Advanced Biology curricula. The school also hosts speakers and presents films in its library on health related topics, such as breast cancer detection, venereal disease, drugs and rape. ACPPE, however, has extended and embellished the general health course Learning Activity Packets (LAPS) developed over the previous two years so that they comprise a unified health and nutrition curriculum text. (see pages 39-40).

Finally, there is a need for health and physical education counseling. The ACPPE provides individual counseling which includes attention to individual limitations, potential, and prescriptive therapeutic programming.

Goals and Objectives

The 1979-80 ACPPE has two overarching purposes from which the program's four major objectives and one sub-objective, have been derived. The two overarching purposes or goals are:

- a. to identify students who have physical (medical) problems and to deliver a program of modified physical education activities to meet those students' needs
- b. to deliver a health and nutrition program to these students

The evaluator has visited the Shea ACPPE site on ten separate occasions and the Tolman site three times. It is evident from these site visitations that both of the program's goals are being realized. The ACPPE's strong conceptual foundation is operable and clearly visible in the classroom.

One of the program's four objectives (2.0) and its sub-objective (2.1) have been modified. At the request of the Pawtucket School Department, the

evaluation study will not assess student pre- and posttest achievement on the Health and Nutrition LAPS nor either the appropriateness or the efficacy of the Health and Nutrition curriculum. Both the LAPS and the curriculum, however, receive a complete descriptive review (see pages 39-40).

The ACPPE's stated objectives for 1979-80 school year are:

- 1.0 To identify and deliver a program of physical education activities to meet the needs of students with identified physical problems that would otherwise medically preclude them from the required physical education program
- 2.0 To deliver a health and nutrition program to these students in order to increase their knowledge of personal health practices
 - 2.1 To complete the development of the LAPS which will form the basis of the health and nutrition program curriculum text
- 3.0 To achieve positive physical change in student's designated restrictive handicap as a result of participation in this program
- 4.0 To achieve an improved attitude toward physical education after participating in a program where all activities are adapted to their special needs, along with smaller classes and a concentration on individualized instruction and peer student assistance

Program Curriculum Design

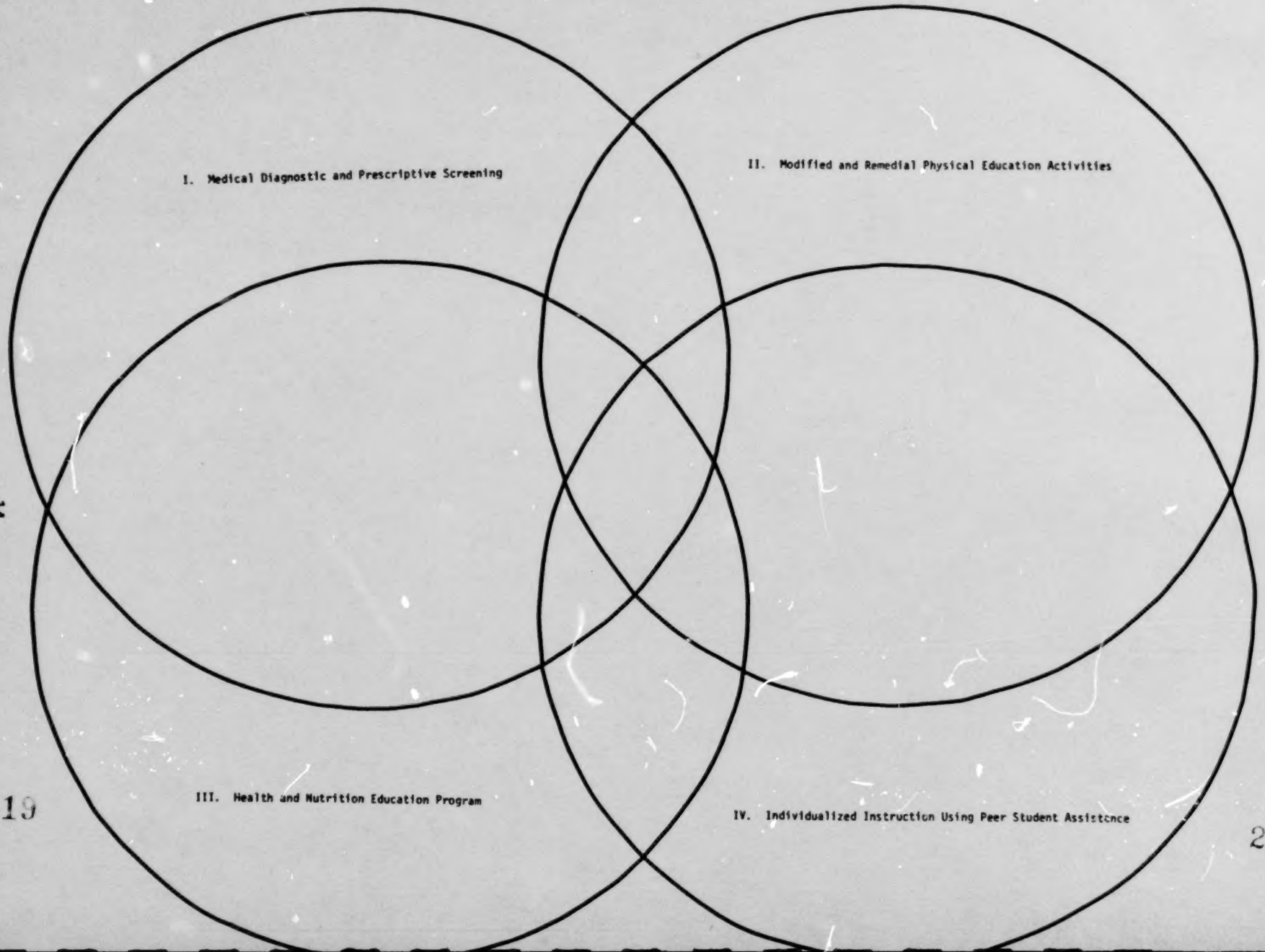
The following four interrelated elements comprise the ACPPE's curriculum design (Figure 2).

1. medical diagnostic and prescriptive screening
2. a program of modified and remedial PE activities
3. a health and a nutrition program
4. individualized instruction with peer student assistance as participants move from exercise to exercise, keep track of and record the number of repetitions for each activity

Each student's program of modified and remedial physical activities has been based on the physician's recommendation form (Appendix B). Many of the

Figure 1

The Four Interrelated ACPPE Curriculum Elements



physicians have also sent more detailed information and instructions written on their prescription (R_x) note paper.

A wide spectrum of PE activities is available to the ACPPE participants ranging from mild activities, e.g., table games and archery to strenuous activities, e.g., tumbling and tennis. The teaching methodology is individualized and it complements the individualized curriculum with a flexibility which allows for the identification and care of each student's needs.

Staff Assignment

The ACPPE staff, two co-directors and a teacher aide, were hired and assigned classroom duties in accordance with the original 1977-78 proposal personnel specifications. These three educators have remained with the program since its implementation. (The teacher aide has recently left the program.) One of the co-directors, the chairwoman of the Shea school's PE Department, is primarily responsible for the planning and supervision of the program. The other co-director shares program operation responsibilities at the Shea school and is implementing the program at the Tolman school. The teacher aide assisted the co-directors and especially the students with the record keeping duties and the classroom instructional activities and provided a substantial amount of individualized attention to each student.

Program Activities: Class scheduling, physical location and setting

There are a total of one hundred ten students who have been scheduled and are participating in the 1979-80 ACPPE, two class periods per week, seventy at Shea and forty at Tolman high schools, respectively (Figures 3 and 4).

Figure 3

Shea High School ACPPE Class Schedule

<u>Period</u>	<u>Number of students</u>	<u>Days the class meets each week</u>	<u>Total students by class period</u>
I	ACPPE classes do not meet this period		
II	12 students	Tuesday and Thursday	12
III	9 students	Tuesday and Thursday	9
IV	5 students	Monday and Tuesday	
	3 students	Monday and Tuesday	
	9 students	Tuesday and Thursday	17
V	4 students	Monday and Tuesday	
	6 students	Monday and Thursday	
	7 students	Tuesday and Thursday	17
VI	2 students	Monday and Tuesday	
	1 student	Monday and Thursday	
	12 students	Tuesday and Thursday	15
Total			<u>70</u>

Figure 4

Tolman High School ACPPE Class Schedule

<u>Period</u>	<u>Monday</u>	<u>Wednesday</u>	<u>Friday</u>	<u>Total</u> <u>students</u>
I	5	4	7	8
II	8	4	9	10
III	-	8	8	8
IV	-	8	8	8
V	-	6	6	6
VI	ACPPE classes do not meet this period			-
			Total	<u>40</u>

The ACPPE classes at Shea meet periods IV through VI every Monday and Thursday, and periods II through VI Tuesday and Thursday. The class schedule (Figure 3) clearly shows that each student participates in the program two class periods a week. The Tolman ACPPE classes meet periods I through V every Monday, Wednesday and Friday. Once again, students participate in two fifty-five

minute APE classes per week. Rhode Island education laws require local education agencies to provide a total of one hundred minutes of PE activities for each student per week.

In the winter months the ACPPE classes meet in and utilize the physical training equipment located in the Shea and Tolman High Schools' weight-lifting rooms. The two weight-lifting rooms are clean, well lit and adequately sized, approximately forty percent of a regularly sized classroom for about thirty students. In addition, both the carpeting and the accessibility of a radio for music enhance the general learning environment. Each of these weight-lifting rooms features a Universal Gym Machine that program participants use on a regular basis.

The Universal Gym Machine consists of two separate physical training units. The larger or main unit, the Centurion II with Dynamic Variable Resistance, has the following eight conditioning stations: 1) leg press station, 2) chest press station, 3) shoulder press station, 4) high lat station, 5) low pulley - quad and dead lift station, 6) chinning station, 7) dipping station and 8) hip flex station. The second, and smaller, unit is the Thigh and Knee Machine which has the following five conditioning stations: 1) leg extension station, 2) back hyperextension station, 3) rowing station, 4) neck conditioning station and 5) wrist roller station.

The two Universal Gym Machine units, the Centurion II and the Thigh and Knee Machine, have a combined total of thirteen exercise stations. An exercise station is the location of specific exercise equipment on the Universal Gym Machine. Many exercises can be performed at each of the thirteen different stations.

ACPPE participants usually include, on the average, ten different activities in their initial exercise program. To begin with, these activities

are limited but with a constant increase in the number of repetitions and weight the program participants can increase the range and number of exercise program activities. All exercise programs are designed and developed in accordance with the physician's recommendations.

Both of the schools have swimming pools which the ACPPE students use, but again this is dependent upon the program recommended for each student. The program staff indicate that the availability of a Universal Gym Machine or other special equipment enhance the program but they are not essential to the program's success. The ACPPE can in fact be highly successful without special physical conditioning equipment. It must be noted that the swimming pools available at each school, on the other hand, provide a special opportunity for several students, such as those confined to a wheel chair, who are unable to participate fully in other types of physical activity.

When appropriate, all of the schools' other indoor and outdoor PE facilities are available to the ACPPE students. Warm fall and spring days, for example, the Shea ACPPE classes utilize the many resources available at the Reed Field facility located a short distance from the school. This includes the track for jogging, the three soft/baseball diamonds, and the soccer and football fields. The nearby Oak Hill tennis and basketball courts are also available to these students. Similar facilities and resources are available to the Tolman High School ACPPE participants.

Occasionally the APE and the schools' regular PE classes simultaneously share a resource. The evaluator, during the Tolman program-site visitation in February, 1980, had the opportunity to view a shared or combined class situation. It is the evaluator's opinion that the twenty students, four APE participants and sixteen regular PE students, two teachers and the ACPPE

teacher aide conducted an exemplary class. Students worked at their own pace and moved from exercise station to exercise station at the Universal Gym Machine in the Tolman weight-lifting room in an orderly and knowledgeable manner. Students accurately adjusted the weight on individual Universal Gym station equipment, recorded the weight and number of exercise repetitions. Students assisted other students, and the two teachers and the teacher aide provided constant encouragement and assistance to their respective students.

Chapter II

Evaluation Study Design

The 1979-80 evaluation study of the Pawtucket School Department's Adaptive and Corrective Program of Physical Education is designed to assess the process of developing and implementing an alternative to the regular physical education program as well as to evaluate the program's activities and the clients' satisfaction. The study design evolved directly from the ACPPE's four major objectives (and one sub-objective) and the information needs identified by the program staff.

The program is in its third year at Shea High School and in its first year at Tolman High School. Therefore, the following two questions provide the foundation for this evaluation study:

- o How appropriate and effective are the services which the ACPPE is providing to the students that participate in this program?
- o How successful was the 1979-80 ACPPE implementation at Tolman High School?

The broad information needs to which this evaluation is addressed are expressed in these questions.

The primary emphasis of the evaluation study is the provision of statistical evidence and descriptive analysis of the program's accomplishment toward the stated objectives. This emphasis is reflected in both the evaluation study design and the final evaluation report frameworks.

Information for the evaluation was obtained from the following two data source categories:

1. Respondents - the respondent universe for data collection activities is divided into four groups:

- a. Program staff
 - b. Clients served
 - c. Teachers and administrators in the two high schools
 - d. Other Pawtucket School Department personnel
2. Other Data Sources - In addition to the data collected through surveys and interviews, the evaluation is based on a review of the following documentation:
- a. Student Activities Files - Each program participant has a personal file including a doctor's diagnosis of the student's physical restrictions, approved physical activities, and the student's record of daily activities.
 - b. Communications - Correspondence and other printed materials used to engage in one and two-way communication with various audiences regarding the project activities.
 - c. Minutes of Meetings - Agendas and summaries of all meetings related to the program's operation.
 - d. Other Reports and Products - Materials prepared by the Program Director, staff, contractors and consultants related to project activities.

The data analysis procedures for the evaluation are composed of the following elements. The AAHPER* Youth Fitness Test and Edgington Attitudinal Survey pre and posttest scores will be analysed with the t-test for nonindependent samples and the sign test. The t-test for nonindependent samples will be used to indicate statistical significance in the physical improvement of the test scores for the students as a group. The sign test will be used to indicate positive or negative net change in individual student performance. Program documents and records and other information obtained through questionnaire surveys and interview protocols will be given a descriptive analysis and review.

*Note: The letter D has recently been added to the AAHPER representing the American Association for Health, Physical Education, Recreation and Dance (AAHPERD).

Chapter III

A. Program Objectives and Results

- 1.0 To identify and deliver a program of adapted physical education activities to meet the needs of students with identified physical problems and who would otherwise be medically excused from the required physical education program

Indicators:

- a) Each student in the ACPPE has his or her own information file which is kept up-to-date on a daily basis. This file begins with the physician's letter to the school requesting that the student be excused from the required PE class and the Physician's Recommendation Form (Appendix B). Several of the files also contain specific exercise and activity limitations written on the physician's prescription (R_x) note paper. A set of prescriptive exercises has been established for each of the program participants.

Each student's file also contains written goals for that student and an anecdotal log completed by the APE teacher. The general nature of the individualized goals and comments increase the difficulty of their assessment. At this time, the written goals and anecdotal remarks provide the APE teachers with one level of tracking student performance over a two or three year period. The importance of this element of the program, however, has not been determined.

Finally, the student's file contains a daily record of physical training activities. Students assist each other to track the weight and quantity of repetitions on each exercise activity. The evaluator considers

this an essential feature of the ACPPE because it encourages the students to accept responsibility for their learning activities. The self-tracking element also puts a tool for the assessment of learning in the hands of the student. Thus, students learn to develop and understand a personal record keeping system in conjunction with the goal setting and achievement process.

- b) Students who are admitted into the ACPPE are pretested on the following five categories of the American Association for Health, Physical Education, Recreation and Dance (AAHPERD) Youth Fitness Test:

- | | |
|----------------|------------------------|
| 1) pull up | 4) standing broad jump |
| 2) sit up | 5) the 50 yard dash |
| 3) shuttle run | |

Two of the categories, the softball throw and the 600 yard run-walk, are not administered to program participants. At the end of each school year, students are posttested on the five test categories. Taken together, the seven selected physical performance test items are "rather unanimously agreed upon by physical educators as important to physical proficiency and as indirect indices of physical fitness."¹

Figure 5 presents the student enrollment data for the three school years that the ACPPE has operated, 1977-80. The number of matched pre- and posttest scores on the AAHPERD Youth Fitness Test subscales are provided in Figure 6.

¹Lockhart, A. A., The Seventh Mental Measurement Yearbook, Oscar K. Buros, editor, 2 vols., The Gryphon Press, N.J., 1972, p. 596, [1977].

Figure 5
ACPPE Student Enrollment Data

Program Year	Total Enrollment	Full-Time Participants	Full-Time Students in Their First Year of Participation	Transient Participants
1977-78	243	35	35	208
1978-79	150	81	46	69
1979-80	110	110	59	0
Totals:	503	226*	140	277

*(86 students participated in more than one program year: Full-time students minus first-year participants)

Figure 6
Number of Matched AAHPERD Youth Fitness Test
Subscale Pre- and Posttest Scores Available for Statistical Analysis

Program Year(s)	Number of Matched Pre- and Posttest Scores	Number of Scores Dropped*	Total	Comments
1977-78	0	0	35	only pretest scores available including 13 students enrolled only in 1978-79
1978-79	45	7	52	
1979-80	56	20	76	Shea-N=41 Tolman-N=36
1977-78 pretest 1978-79 posttest	15	0	15	
1977-78 pretest 1979-80 posttest	2	4	6	
1978-79 pretest 1979-80 posttest	14	3	17	

*because students "could not do" an activity

As Figure 6 clearly shows, only the pretest scores for the 1977-78 participants are available for statistical analysis.

A total of fifty-two matched pre- and posttest scores for the 1978-79 program year have been analyzed and are presented in Figure 7. The t-test for nonindependent samples has been applied to the matched pre- and posttest scores and indicates that the improvement of these fifty-two students is statistically significant at the .05 level for all five subscales of the AAHPERD Youth Fitness Test (Figure 7). The sign test applied to this data indicates a positive change for approximately 605 of the 1978-79 participants on all five test subscales. Further, less than 15% of the 1978-79 participants showed negative change on the test subscales while, on the average, 10% of the participants' scores remained the same (Figure 7).

A closer look into the 1978-79 program data confirms these findings. For example, of the fifty-two 1978-79 program participants thirteen participated only during the 1978-79 school year (Figure 8). Although the t-test indicates statistical significance for three of the five subscales, i.e., the pull-up, sit-up and shuttle run test categories; the sign test indicates positive change for 70% of the participants on the pull up, shuttle run and 50 yard dash subscales and 15% on the long jump subscale. Negative changes for the pull up and sit up subscales, however, is zero (Figure 8).

Similarly, the combined matched pre- and posttest scores of the Shea and Tolman High Schools is statistically significant at the .05 level for the five

Figure 7

1978-79 Matched Pre and Posttest Scores

t-test Results:

1. pull up	N = 45 dropped = 7	t = 2.92*	*significant at the .05 level
2. sit up	N = 45 dropped = 7	t = 5.33*	
3. shuttle run	N = 45 dropped = 7	t = 4.39*	
4. long jump	N = 45 dropped = 7	t = 4.05*	
5. 50 yard dash	N = 45 dropped = 7	t = 3.90*	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	29	56%	13	25%	3	5%	7	14%	52
sit up	36	69%	7	13%	2	4%	7	14%	52
shuttle run	35	67%	5	9%	5	9%	7	14%	52
long jump	31	60%	5	9%	7	13%	9	17%	52
50 yd. dash	32	61%	6	12%	7	13%	7	14%	52

Figure 8

1978-79 Matched Pre- and Posttest Scores

Thirteen students of the fifty-two who participated in only the 1978-79 program

t-test Results:

1. pull up	N = 10 dropped = 3	t = 2.96*	*significant at the .05 level
2. sit up	N = 10 dropped = 3	t = 4.20*	
3. shuttle run	N = 10 dropped = 3	t = 2.62*	
4. long jump	N = 10 dropped = 3	t = 1.98	
5. 50 yd. dash	N = 10 dropped = 3	t = 2.80	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	9	70%	2	15%	0	0%	2	15%	13
sit up	10	77%	1	8%	0	0%	2	15%	13
shuttle run	9	70%	1	8%	1	8%	2	15%	13
long jump	7	54%	2	15%	2	15%	2	15%	13
50 yd. dash	7	70%	1	8%	1	8%	2	15%	13

test subscales (Figure 9). Also, the sign test indicates positive change for 31 percent of the participants on the pull up subscale, 49 percent on the sit up subscale, 53 percent on the shuttle run subscale, and 50 percent on the long jump and 50 yard dash subscales. Clearly the ACPPE has assisted the student participants to build and improve their physical skill abilities. The analysis and interpretation of the data indicates that the program has been both statistically and educationally significant as well as beneficial for the student participants.

A separate analysis of the 1979-80 Shea High School matched pre and posttest scores (Figure 10) and the Tolman High School matched pre and posttest scores (Figure 11) indicates slightly higher statistical gains among the Tolman program participants. On all subscales except the 50 yard dash, however, the Shea program participants achieved greater positive change than the Tolman program participants as indicated by the sign test results. That is, the Tolman program achieved statistical significance on the five test subscales (Figure 11) while the Shea program achieved statistical significance on four of the subscales. Statistical significance was not achieved on the 50 yard dash by the Shea 1978-79 program participants (Figure 10).

The sign test results interpreted in light of the t-test results are very interesting for this group of participants (Figure 12). On all subscales except the 50 yard dash subscale a greater percentage of the Shea school's students achieved positive change than did the Tolman school's students. As noted earlier, the Shea program is in its third operational year while the Tolman program was implemented this 1979-80 school year. The data results from these two programs illustrate the variance caused by individual physical limitations and disabilities.

Figure 9
1979-80 Matched Pre- and Posttest Scores
Shea and Tolman High Schools

t-test Results:

1. pull up	N = 56 dropped = 20	t = 5.28*	*significant at the .05 level
2. sit up	N = 48 dropped = 28	t = 8.22*	
3. shuttle run	N = 49 dropped = 27	t = 6.86*	
4. long jump	N = 48 dropped = 28	t = 7.12*	
5. 50 yd. dash	N = 50 dropped = 26	t = 3.55*	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	24	31%	31	41%	0	0%	21	28%	76
sit up	37	49%	10	13%	1	1%	28	37%	76
shuttle run	40	53%	5	7%	4	5%	27	35%	76
long jump	38	50%	7	9%	3	4%	28	37%	76
50 yd. dash	38	50%	7	9%	5	7%	26	34%	76

Figure 10

1979-80 Matched Pre- and Posttest Scores

Shea High School

t-test Results:

1. pull up	N = 32 dropped = 9	t = 3.80*	*significant at the .05 level
2. sit up	N = 30 dropped = 11	t = 7.09*	
3. shuttle run	N = 29 dropped = 12	t = 5.39*	
4. long jump	N = 32 dropped = 9	t = 7.09*	
5. 50 yd. dash	N = 29 dropped = 12	t = 1.28	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	14	34%	18	44%	0	0%	9	22%	41
sit up	26	63%	3	7%	1	3%	11	27%	41
shuttle run	23	56%	4	10%	2	5%	12	29%	41
long jump	25	61%	6	14%	1	3%	9	22%	41
50 yd. dash	17	42%	7	17%	5	12%	12	29%	41

Figure 11

1979-80 Matched Pre- and Posttest Scores

Tolman High School

t-test Results:

1. pull up	N = 24 dropped = 12	t = 3.61*	*significant at the .05 level
2. sit up	N = 18 dropped = 17	t = 4.28*	
3. shuttle run	N = 20 dropped = 15	t = 4.21*	
4. long jump	N = 17 dropped = 18	t = 3.20*	
5. 50 yd. dash	N = 35 dropped = 14	t = 5.80*	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	10	29%	13	37%	0	0%	12	34%	35
sit up	11	31%	7	20%	0	0%	17	49%	35
shuttle run	17	49%	1	3%	2	5%	15	43%	35
long jump	13	37%	1	3%	2	5%	19	54%	35
50 yd. dash	21	60%	0	0%	0	0%	14	40%	35

Figure 12

Percent of Positive Change for the Separate 1979-80
Shea and Tolman High School Programs

Percent of Positive Change		
	Shea	Tolman
pull up	34%	29%
sit up	63%	31%
shuttle run	56%	49%
long jump	61%	37%
50 yd. dash	42%	60%

Individual limitations and disabilities also effect the longitudinal analysis of the data. Specifically, the matched 1977-78 pretest and 1978-79 posttest scores (Figure 13) are statistically significant for the pull up subscale of the Youth Fitness Test. None of the other four subscales (sit up, shuttle run, long jump or 50 yard dash) proved to be statistically significant for this group of students.

A closer examination of the sign test results, however, provides a different synopsis of the program participants' improvement. As Figure 13 shows, 80 percent of the students achieved positive change on the pull up subscale, 67 percent on the sit up, shuttle run and long jump subscales and 53 percent on the 50 yard dash subscale. Obviously, the students have improved their performance abilities significantly; although the t-test for nonindependent samples does not indicate statistical significance on any of the subscales except the pull up subscale.

The matched 1977-78 pretest and 1979-80 posttest scores indicate similar analysis complications. Again, the t-test results provide statistical significance for one of the five test subscales, the 50 yard dash (Figure 14).

Figure 13
Matched 1977-78 Pretest/1978-79 Posttest Scores

t-test Results:

1. pull up	N = 15 dropped = 0	t = 2.85*	*significant at the .05 level
2. sit up	N = 15 dropped = 0	t = 1.65	
3. shuttle run	N = 13 dropped = 2	t = 1.36	
4. long jump	N = 14 dropped = 1	t = 1.43	
5. 50 yd. dash	N = 13 dropped = 2	t = 1.08	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	12	80%	1	7%	2	13%	0	0%	15
sit up	10	67%	2	13%	3	20%	0	0%	15
shuttle run	10	67%	0	0%	3	20%	2	13%	15
long jump	10	67%	0	0%	4	27%	1	6%	15
50 yd. dash	8	53%	1	7%	4	27%	2	13%	15

Figure 14

Matched 1977-78 Pretest/1979-80 Posttest Score

t-test Results:

1. pull up	N = 2 dropped = 4	t = 0	*significant at the .05 level
2. sit up	N = 1 dropped = 5	t = 0	
3. shuttle run	N = 2 dropped = 4	t = 0.66	
4. long jump	N = 2 dropped = 4	t = 1.30	
5. 50 yd. dash	N = 2 dropped = 4	t = 7.0*	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	1	17%	1	17%	0	0%	4	66%	6
sit up	1	17%	0	0%	0	0%	5	83%	6
shuttle run	1	17%	0	0%	1	17%	4	66%	6
long jump	2	34%	0	0%	0	0%	4	66%	6
50 yd. dash	2	34%	0	0%	0	0%	4	66%	6

Furthermore, a positive change is illustrated by the sign test for 17 percent of the participants on the pull up, sit up and shuttle run subscales, and 34 percent on the long jump and 50 yard dash subscales. It is the evaluator's opinion that the small number of students in this group (N=6) and the fact that most of the students in this group could not participate in the pre- or posttesting has negatively shaded the results of the analysis (Figure 14).

Conversely, analysis of the matched 1978-79 pretest and 1979-80 posttest scores are statistically significant for three of the five subscales: the sit up, shuttle run and 50 yard dash subscales (Figure 15). The sign test results are indicative of greater positive change, 41 percent of the participants during this two-year period showed positive change on the pull up subscale, 64 percent on the sit up subscale and 70 percent on the shuttle run, long jump and 50 yard dash subscales.

- c) Since the ACPPE includes a weight gain and loss component for those students who might benefit from weight control counseling, the previous program evaluator suggested that the program staff gather and maintain information on weight and waist size on a regular basis. The program staff agreed with this suggestion and implemented a weight gain and loss program information record-keeping system.

During the 1978-79 program year twenty-eight students were assigned to a weight loss program and three to a weight gain program.² Students assigned to the Weight Loss Program I reduced their weight by an average loss of seven pounds, an average waist decline of one inch. Those students in the Weight Loss Program II reduced an average of three pounds, an average waist reduction of one-half inch. The Weight Loss Program III participants average just over

²Morton, D. S. and Thibault, C. G., "Pawtucket Adaptive and Corrective Physical Education and Health Education for the Handicapped, Final Report, July 15, 1979," Curriculum Research and Development Center, R. I., p. 25.

Figure 15

Matched 1978-79 Pretest/1979-80 Posttest Scores

t-test Results:

1. pull up	N = 14 dropped = 3	t = 0.86	*significant at the .05 level
2. sit up	N = 14 dropped = 3	t = 2.16*	
3. shuttle run	N = 14 dropped = 3	t = 2.51*	
4. long jump	N = 14 dropped = 3	t = 1.61	
5. 50 yd. dash	N = 14 dropped = 3	t = 2.64*	

sign test Results:

	Positive Change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
pull up	7	41%	5	29%	2	12%	3	18%	17
sit up	11	64%	0	0%	3	18%	3	18%	17
shuttle run	12	70%	0	0%	2	12%	3	18%	17
long jump	12	70%	0	0%	2	12%	3	18%	17
50 yd. dash	12	70%	0	0%	2	12%	3	18%	17

a quarter of a pound weight loss, reducing their waist size about three-quarters of an inch. The three students assigned to the Weight Gain Program added an average of four pounds, increasing their waist size about one-quarter of an inch.

A total of seven students were assigned to a weight loss and one student to a weight gain program during the 1979-80 program year (Figure 16). The weight and waist size records are one facet of the activities records students are required to maintain. It is evident that this information enhances the effectiveness of the evaluation and, on an individual basis it also provides students with a reporting and evaluation tool they can use themselves. Allowing students to take responsibility for their learning by recording and tracking their own performance on various activities over an extended period of time, with the appropriate supervision, is one of the exceptional qualities of the ACPPE program.

Figure 16

1979-80 Weight Loss and Gain Program Information

Student	G=Gain L=Loss	Weight in	Weight out	Weight lost/gained	Weight lost/gained
1	G	88 lbs.	90 lbs.	2 lbs.	$\frac{1}{2}$ "
2	L	123 lbs.	119 lbs.	4 lbs.	$\frac{3}{4}$ "
3	L	157 lbs.	140 lbs.	17 lbs.	2 "
4	L	151 lbs.	141 lbs.	10 lbs.	$\frac{1}{2}$ "
5	L	191 lbs.	183 lbs.	8 lbs.	$\frac{1}{2}$ "
6	L	256 lbs.	199 lbs.	57 lbs.	6 "
7	L	189 lbs.	180 lbs.	9 lbs.	$\frac{1}{2}$ "
8	L	274 lbs.	265 lbs.	9 lbs.	$\frac{1}{2}$ "

d) It must be noted that the ACPPE students may have disabilities which can impede continuous physical development or improvement. For instance, several students were unable to participate or scored a zero on one or more of the AAHPERD Youth Fitness Test item subscales. Some of the students can only be expected to maintain their present level of fitness and test performance. While other students may score higher on the pretest than on the posttest because of day-to-day changes in either the physiological or psychological components of health and fitness.

Considered to be "largely individual,"³ the AAHPERD Youth Fitness Test items are appropriate for developing a "personal cumulative record"⁴ or profile for a student. The clearest picture of program impact upon students, then, will be attainable by viewing each student's individual AAHPERD Youth Fitness Test item scores. An undertaking not within the scope of this evaluation study.

Further, we should consider that the continued application and participation of the student to the program of adaptive physical education activities is, in some of the cases, as significant as positive improvement on any of the skill development tasks. The reason for this is that many of the ACPPE participants would not have the opportunity or the impetus to become engaged in physical activity of any kind without the availability of this program.

2.0 To deliver a health and nutrition program to increase students' knowledge of personal health practices

³Lockhart, A. A., The Seventh Mental Measurements Yearbook, Oscar K. Buros, editor, 2 vols., The Gryphon Press, N.J., 1972, p. 593, [974].

⁴Ibid.

Indicators:

At the request of the Pawtucket School Department, and in consideration of time and financial constraints, this evaluation study does not attempt to assess the program's achievement toward the realization of this (2.0) objective. An evaluation of this objective has been provided in prior evaluation reports.

2.1 To complete the development of LAPS which will form the basis of the health and nutrition program curriculum

Indicators:

- a) The evaluator has reviewed a draft copy of the "Secondary School Health Curriculum" developed by the APE staff. This curriculum is based upon the LAPS developed by the program. In addition to the previously developed LAP materials, drawings and a bibliography for each of the subject topic areas have been developed and included in the curriculum text. The curriculum text has been completed and printed by the Pawtucket School Department during this 1979-80 program year.

The curriculum's twelve units contain a total of thirty-three subject topic areas. The unit and subject breakdown follows.

Unit One

Fitness for Life
Orthopedic Condition
Bursitis
Knee
Shoulder
Spine and Scoliosis
Fractures

Unit Two

Respiratory Conditions
Bronchitis
Allergies

Unit Three

Sensory Disorders
Hearing
Vision

Unit Four

Emotional Health
Anxiety
Seizure Disorders

Unit Five

Family Living
Reproduction
Heart Disorders
Diabetes
Kidney Disorders
Skin Disorders
Underweight and Overweight

Unit Six

Digestive System

Unit Seven

Dental Health

Unit Eight

Infectious Diseases
Mononucleosis
Chronic and Degenerative Diseases
Smoking, Alcohol and Drugs

Unit Nine

Anatomy and Physiology

Unit Ten

Reliable Health Information

Unit Eleven

Consumer and Environmental
Health

Unit Twelve

Consumer Protection and
Current Trends

- b) An Adaptive Physical Education curriculum text was also completed by the ACPPE staff and printed by the Pawtucket School Department this year. Copies of the ACPPE curriculum text and the Health and Nutrition curriculum text may be obtained from the Pawtucket School Department, Federal Programs Director's Office.

3.0 To achieve positive physical change in students' designated restrictive handicap as a result of participation in this program

Indicators:

- a) Analysis of the AAHPERD Youth Fitness Test matched pre- and posttest scores show that a majority of students improved on all five test item subscales (see

objective 1.0). Again, in some of the cases, the continued participation of students who otherwise would not participate in any physical activity or exercise program is as important as positive changes in the skill abilities of these students. In many cases the objective of bringing about a "positive change in a student's designated restrictive handicap as a result of participation" in the ACPPE is an unattainable and unrealistic expectation. As a result of participation in this program, however, the majority of students have exhibited a positive change or improvement in their performance ability on the five AAHPERD Youth Fitness Test subscales: the pull up, sit, up, shuttle run, long jump and 50 yard dash.

While composed of two specific components, one of modified physical education activities and the other of remedial physical education activities; the adaptive physical education program does not include a physical therapy component. Therefore, it seems reasonable to expect to see improvement in student test scores over a period of time but it does not seem reasonable to expect a change in the students designated handicap. For example, a student with a back problem can increase his or her ability to lift heavy objects with a proper weight training program but this program will not in and of itself repair the injury. The exercise program will help to improve ability rather than repair physical damage.

- 4.0 To achieve an improved attitude toward physical education after participating in a program where all activities are adapted to students' special needs, along with smaller classes and a concentration on individualized instruction

Indicators:

- a) In order to ascertain whether students participating in the ACPPE have an improved attitude toward physical education due to the program, students have been pre- and posttested using the Edgington Attitudinal Scale assessment instrument. The number of matched pre- and posttest scores for the Edgington Attitudinal Scale are presented in Figure 17. As Figure 17 shows, matching pre- and posttest Edgington Attitudinal Scores for the 1979-80 program participants has been made available for analysis.

Figure 17

Matched Pre- and Posttest Scores of the
Edgington Attitudinal Scale Available for Analysis

	Program Year				
	1977-78	1978-79	1979-80		Shea and Tolman combined
			Shea	Tolman	
Number of matched pre and posttest scores	0	0	29	26	55
Number of scores dropped from analysis because students could not do an activity	0	0	41 ⁺	14 ⁺⁺	55

⁺30 pretest scores without matching posttest scores and 11 posttest scores without matching pretest scores

⁺⁺10 pretest scores without matching posttest scores and 4 posttest scores without pretest scores

The Curriculum Research and Development Center's July 15, 1979 Final Report⁵ provides an analysis of the 1978-79 Edgington Attitudinal Scale matched pre- and posttest scores. The report states that with twenty-five matched pre- and posttest scores, analysis yielded a t-value of .017 and that this t-value is statistically significant at the .05 level. According to the table of t-values⁶, with twenty-five matched pre- and posttest scores (twenty-four degrees of freedom) a t-value of 2.064 would be necessary for statistical significance at the .05 level.

Analysis of the 1979-80 Edgington Attitudinal Scale matched pre- and posttest scores (Figure 18) indicates a statistically significant improvement in attitude for the Shea program participants but not for the Tolman program participants. The reason for these results are evident in the sign test results also provided in Figure 18. Although the Tolman students have a greater percentage of positive improvement (30% for the Shea students and 32.5% for the Tolman students, respectively) the Tolman students have a greater percentage of negative improvement as well (11% for the Shea students and 32.5% for the Tolman students, respectively). The difference in the longevity of the two programs, the Shea program has operated for three years while this was the first year of program operations at the Tolman School, might be a possible explanation of the Edgington t-test and sign test results. It can be stated, however, that the ACPPE has made some educational significant changes in the students' attitudes toward physical education, thus achieving this objective (4.0).

⁵Morton, D.S. and Thibault, C.G., "Pawtucket Adaptive and Corrective Physical Education and Health Education for the Handicapped," Final Report, July 15, 1979, Curriculum Research and Development Center, R.I., p. 17.

⁶Ary, D.; Jacobs, L.C.; and Razavieh, A., Introduction to Research in Education, Holt, Reinhart and Winston, Inc., 1972, N.Y., p. 360, Table of t-values from Table II of Fisher and Yates: Statistical Tables for Biological, Agricultural and Medical Research, published by Oliver and Boyd, Edinburgh.

Figure 18

Matched 1979-80 Edgington Attitudinal Scale Pre- and Posttest Scores

<u>t-test Results:</u>			
	<u>N</u>	<u>dropped</u>	<u>t value</u>
Shea High School	29	41	2.83*
Tolman High School	26	14	- .05
Shea and Tolman High Schools Combined	55	45	1.42

*significant at the .05 level

sign test Results:

	Positive change	%	Remained the same	%	Negative Change	%	Dropped	%	Total
Shea High School	21	30%	0	0%	8	11%	41	59%	70
Tolman High School	13	32.5%	0	0%	13	32.5%	14	35%	40
Shea and Tolman High Schools Combined	34	31%	0	0%	21	19%	55	50%	110

- b) During last week of May 1980 the evaluator visited both the Shea and Tolman program sites to observe classes and to interview students. The number of students interviewed at each of the program sites is enumerated in Figure 19. The interview questions and students' answers follow. In order to keep the Shea and Tolman answers separate, the Shea program students' responses are on the left side of the page while the Tolman students' responses are recorded on the right side of the page.

Figure 19
Number of Students Interviewed
at Shea and Tolman High Schools

	Number of Students in the Program	Number of Students Interviewed	Percent of Students Interviewed
Shea	70	32	46%
Tolman	40	11	28%
Totals:	110	43	39%

1. How many years have you been in this adaptive physical education class?

(Shea program students' responses)

(Tolman program students' responses)

1 year - 18

1 year - 11

2 years - 10

3 years - 4

2. What kind of program did you participate in before this adaptive physical education program?

regular physical education - 28

study - 7

study - 2

regular physical education - 4

special class - 1

exercises - 1

3. How would you rate those physical education activities?

low										high
1	2	3	4	5	6	7	8	9	10	
3	3	0	4	2	5	6	5	3	1	

low										high
1	2	3	4	5	6	7	8	9	10	
2	0	0	1	1	1	2	1	1	2	

Shea and Tolman Combined

low										high
1	2	3	4	5	6	7	8	9	10	
5	3	0	5	3	6	8	6	4	3	

4. What kinds of activities do you participate in during the adaptive physical education class?

universal gym - 4

universal gym and frisbee - 7

universal gym, archery and
frisbee - 1

universal gym, frisbee and
jogging - 2

frisbee, ping pong, basketball
baseball and universal gym - 1

universal gym, frisbee, jogging,
tennis and basketball - 2

universal gym, frisbee and
tennis - 1

universal gym, frisbee, archery
and tennis - 1

frisbee, tennis and archery - 1

universal gym, archery and
tennis - 1

universal gym and archery - 1

tennis - 1

N R - 7

universal gym - 1

frisbee - 2

frisbee and archery - 1

universal gym, swimming and
frisbee - 1

universal gym and frisbee - 2

universal gym, golf, frisbee
and swimming - 1

N R - 3

5. Do you feel comfortable in the adaptive physical education class?

yes - 29

no - 1

yes - 8

no - 2

N R - 1

Comments:

I don't like gym. - 2

It's easier on my limitations.

It's easier for students with
different problems.

I'm not pushed to do more things than I can do.

It's more fun, interesting, smaller classes and good rapport with the teacher.

It's not a strenuous class and you can go at your own speed.

I can work on my special problem areas.

There is a very warm atmosphere between the teacher and the students.

very individual attention

There's more individual attention and smaller classes.

I don't like gym at all.

I'd rather have a study to do my homework.

6. How would you rate this adaptive physical education class?

low										high	
1	2	3	4	5	6	7	8	9	10		
0	0	0	1	1	5	0	7	10	8		

low										high	
1	2	3	4	5	6	7	8	9	10		
0	0	0	0	0	2	2	2	4	1		

low										high	
1	2	3	4	5	6	7	8	9	10		
0	0	0	1	1	7	2	9	14	9		

7. Has your participation in the ACPPE program helped you develop an awareness and understanding of your physical limitations and the activities in which you can successfully and safely participate and complementary health and nutrition practices? Explain.

yes - 26

no - 6

yes - 7

no - 4

Comments:

I knew my limitation before.

It has helped build muscles and control weight.

I lost weight and got in shape.

More individual attention

I'm less shy in this class.

The class is smaller.

Regular physical education showed me my limitations.

They don't make you push yourself.

I read a lot and learned about exercises and food.

Teachers help a lot more.

I can do a little more than I could before and next year I hope I can do more.

I feel more comfortable, not pressured to perform.

Things I thought I couldn't do, I can do with teachers' help.

Shows us a lot.

It's boring.

not rushed and shown what to do

smaller classes and more individual attention

We do things we don't do in regular physical education.

I have more confidence in myself, for example, I never thought I could play tennis but I do have the coordination - other teachers don't take the time with you.

8. Would you recommend this adaptive physical education class for other students?

yes - 31

yes - 10

no - 1

no - 1

Comments:

You can learn more.

If they have problems and want to take gym, it's better than study.

easier than other gym

If they don't take regular PE, it's better than sitting around.

good program

only if needed

deals with helping you with your particular problem

small class, do more stuff
teacher helps more than others
will help them if they have problems
good for health

If you have a physical handicap, it
is hard to be with kids who can
do good.

better to help with problems and
doesn't penalize what you can't do

It teaches a lot, I learned a lot
and they don't force you to do what
you can't do. In the other physical
education they do force you.

nice to you

I can see that it helps.

more fun, things I like to do

Like regular PE but more enjoy-
able and I'm not competing with
the school athletes.

smaller classes and not rushed
to learn

good class, fun

You get more individual attention.

If they don't like gym and can't
do anything else.

If they need it.

Study is better.

better than not in gym at all

You learn a lot more than in a
regular classroom, smaller classes
and the teacher doesn't yell.

An examination of the Shea and Tolman High Schools' participants' responses to question 3 (How would you rate your previous physical education experiences?) and question 6 (How would you rate your ACPPE experiences?) indicates a great degree of satisfaction with the ACPPE (Figure 20). Specifically, 63 percent of the respondents rated their previous PE experiences from six to ten on the rating scale. Furthermore, only 30 percent of the respondents rated their previous PE experiences from eight to ten on the rating scale but, on the other hand, 75 percent of the respondents rated the ACPPE from eight to ten on

the rating scale (Figure 20). The ACPPE students appear to be much happier with their experiences in the adaptive program than with their regular PE program experiences.

Figure 20
Physical Education Experiences Attitudinal Ratings
with Shea and Tolman Participants Responses Combined

	low 1	2	3	4	5	6	7	8	9	high 10
Question 3 - Rate your previous PE experiences	5	3	0	5	3	6	8	6	4	3
Percent of responses	12%	7%	0%	12%	7%	14%	19%	14%	9%	7%
Question 6 - Rate your ACPPE experiences	0	0	0	1	1	7	2	0	14	9
Percent of responses	0%	0%	0%	2%	2%	16%	5%	21%	33%	21%

One of the students interviewed regarding the adaptive program had previously taken part in the regular PE program and until a game injury had been a member of the Shea High School's football team. When tackled during a football game by three gentlemen on the opposition team, this student's back and neck were severely injured and required considerable treatment and hospitalization. This student expressed great satisfaction with the program stating that, "things I thought I couldn't do before, I find I can do with the teachers help [because] the teachers assist and don't force you to do what you can't do."

Finally, there was one ACPPE participant, a young girl, who will not speak with any male teachers and very few of the students. Often, this girl will not

remove her coat. The evaluator during observations has seen this girl participate in the program activities, speak with one or two other students, speak with the program's teacher aide and occasionally smile briefly. The program staff have been extremely gentle, patient and understanding in their attempt to assist this student. To some degree their attempts have, in the evaluator's opinion, been successful and the program staff deserve the recognition of their successful efforts in such a special and individual approach to this student's particular problems. This student would not be able to function in the regular PE environment and without the ACPPE and its staff's concern and involvement would, in all probability, become more withdrawn and introverted.

B. Isolating Variables

It is this evaluator's opinion that the variable indicators for the ACPPE's goals and objectives are isolated from all other variables that would effect either the project's activities or the population served. The AAHPERD Youth Fitness Test and the Edgington Attitudinal Survey matched pre- and posttest scores have been analyzed with the t-test for nonindependent samples and the sign test. The t-test takes into account the magnitude of the difference between the paired pre- and posttest scores thus providing analysis of the correlated means. The sign test focuses on the median scores rather than the mean scores and does not adjust itself according to the magnitude of the difference between the paired pre- and posttest scores.

Further, Steel and Torrie in Principals and Procedures of Statistics state that the sign test, "has a number of advantages . . . [but it] is not very sensitive to gross recording errors . . . [and] has the disadvantage of throwing away a lot of information in the magnitude of the differences."⁷

⁷Steel, R. G. D., and Torrie, J. H., Principals and Procedures of Statistics, McGraw-Hill Book Company, Inc., 1960, N.Y., p. 401.

Examined together, however, the t-test and sign test results provide credible information regarding the statistical and educational significance of the results of the program's measured objective achievement in relation to the performance criteria stated for each of the objectives. As Chapter III, Section A of this report illustrates, there is a strong and consistent indication that the ACPPE activities are responsible for student improvement and growth.

C. Non-Quantifiable Outcomes

It does appear that non-quantifiable outcomes have emerged as a result of the project. First of all, there is an excellent rapport between the student participants and between the students and the teachers. Secondly, the program has raised the students' awareness of the process of developing and maintaining physical fitness, good health and personal grooming. The excellent rapport and sensitivity that the project staff have developed with the participants as well as the student's enthusiasm for the program raise our hopes and expectations that a majority of these students will maintain a positive attitude toward their own physical fitness, health practices and personal grooming techniques.

Finally, since the implementation of the ACPPE school-community involvement has been enhanced. The project is based on a cooperative effort by the school, the program staff, appropriate medical agencies, and physicians. These usually individual services have been effectively combined into one common service that has assisted the Pawtucket Public School system's efforts to improve the physical and mental health of its students. This has been accomplished by providing specialized services for students who otherwise would be excused from

participating in the required PE program thus significantly reducing the number of students assigned to study halls. The ACPPE, then, has diminished unwarranted excuses and provided physical education activities for virtually every student attending school.

Chapter IV
Information Needs - Evaluation Questions

A. Assessment of Program Activities

1. What factors facilitate (and which factors impede) participation by potential clients?

variables: identification of reasons for participation (and non-participation) in the ACPPE

data sources: program staff and student participants

data collection procedures: check list for review of documentation and student participant interview protocol

Program eligibility is based upon a physician's written request to excuse the student from the required PE activities. Admittance into the ACPPE is achieved by the physician's activities recommendation form (Appendix B) and the potential participant's initial and then yearly physical examinations. The student's awareness and knowledge of his or her own disability and limitations facilitate program participation.

The student's understanding of his or her own ability to perform and to improve that performance ability is central to the program's success. A student's lack of awareness, knowledge and understanding, however, seriously impedes both the student's participation and efforts toward physical improvement.

The ACPPE has been successful in improving the students' awareness and understanding of their personal limitation and the student record-keeping procedures have allowed students the responsibility of tracking and designing their own physical improvement program over an extended period of time. Thus, students have gained experience in the development of a physical improvement

activities plan and a complementary monitoring system as well as an improved knowledge and understanding of personal limitations.

2. How do participants assess the responsiveness of the program?

variables: ratings of program components

data source: program participants

data collection procedures: student participant interview protocol

The Shea and Tolman High Schools' ACPPE participants who were interviewed were asked to rate both their previous PE experiences and their APE experiences on a scale of 1 (low) to 10 (high). As Figure 20 illustrates 63 percent of the respondents rated their previous PE experiences from six to ten on the rating scale while 96 percent rated their APE experiences six to ten on the rating scale. Only 30 percent of the respondents rated their previous PE experiences from eight to ten on the rating scale while 75 percent rated the APE experiences from eight to ten on the rating scale. The ACPPE participants, then, rated the responsiveness of the adaptive program considerably higher than their previous regular PE experiences.

3. How do participants assess the utility of the individual training the program provides?

variables: description and assessment of individual training exercises

data source: program participants

data collection procedures: student participant interview protocol

The students interviewed indicated a high degree of satisfaction with the individual training provided by the program. This was especially the case at Shea High School where the program is in its third year of operation. At

Tolman High School there is still some reluctance toward the program and several students indicated a preference for study rather than any PE activities. The Tolman High School ACPPE was new this year, 1979-80, which probably accounts for the difference in the degree of acceptance toward the adaptive program. It is anticipated that as the Tolman program matures, students will become increasingly receptive to the ACPPE.

B. Project Impact

1. What are the actual effects of the program?

variables: changes in student participant's ability and knowledge

data source: program participants

data collection procedures: AAHPERD Youth Fitness Test and Edgington Attitudinal Scale test results analysis

Analysis of the test scores provides evidence that, in the majority of cases, students improved their physical performance on the pull up, sit up, shuttle run, long jump and 50 yard dash skill activities and their attitude toward PE. Therefore, the ACPPE has had positive effects on a) the students' physical abilities, b) attitudes toward physical exercise and activities, and c) the schools' curriculum offerings, i.e., a program of physical activities is now available for every student attending school. This has significantly reduced the number of students who are excused from participating in the schools' required PE activities and the number of students assigned to a study hall.

2. Can the district do without the program?

variables: program alternatives and their impact on the school and the district

data sources: Pawtucket School Department personnel, program staff and student participants

data collection procedures: formal and informal interview
protocol

It appears to this evaluator that the ACPPE has provided results that could not otherwise be achieved. First, students who would not have the opportunity or the impetus to become engaged in physical activity of any kind without the availability of this program have been significantly and positively effected by the program. Second, the majority of the student participants improved their physical abilities and general attitude toward PE activities.

Third, the students have developed a good rapport with each other and with the teacher. Students voiced appreciation with the non-competitive, individual attention they have been given in the program as well as the program of physical improvement which, in many instances, has improved a student's physical stamina and abilities. There does not appear to be any alternatives to this program that would provide similar effects or results.

3. To what extent are the program's effects different from the ostensible purposes of the program?

variables: program effects different from, or not stated in, the
project's proposal

data sources: student records, program staff and student participants

data collection procedures: review of documentation and formal
and informal interview protocols

In addition to the program's ostensible purposes, several other positive effects can be attributed to the program. These additional, non-quantifiable outcomes, include the following:

1. an excellent student-teacher and peer student rapport;

2. an improved awareness by the students of the process of developing and maintaining physical fitness, good health and personal grooming; and
3. school-community relationships and involvement have been enhanced.

C. Communications

1. To what extent are target audiences aware of the program, its objectives and activities?

variables: measures of target population knowledge and interest in the ACPPE

data sources: student participants

data collection procedures: student participant interview protocol

Student interviews indicate a considerable understanding of the program, its objectives and activities. The students are aware of their own limitations and how the physical activity can help to improve their performance abilities. Further, student participants almost unanimously indicated that they would recommend the adaptive program for other students.

Forty-one of the students interviewed, 95 percent, responded yes, they would recommend the program to others and two students, 5 percent, responded no, they would not recommend the program to other students. We conclude, then, that students are aware of the programs' efficacy for others as well as for themselves.

2. How effective are communications between the staff and the project audience?

variables: communication activities undertaken regarding programs for individual students

data sources: documentation and project staff

data collection procedures: review of documentation and informal interview protocol

At a minimum, the screening procedures include a physician's written request to excuse a student from the required PE class and an activities recommendation form completed and signed by the physician. Contact and a continuous dialogue with individual physicians is made by the program staff when necessary. These communications have effectively established an individual educational plan for each student based upon medical diagnostic and prescriptive data.

3. How is the program perceived by teachers and administrators?

variables: knowledge and perception about the ACPPE

data sources: Pawtucket School Department personnel

data collection procedures: informal interview protocol

The program has been well received among other teachers and administrators in the Pawtucket School Department. Other physical education teachers expressed positive and encouraging attitudes toward the program. Administrators at both of the high schools have been extremely helpful and supportive of the program and have indicated an interest in the program and its continued operation.

D. Information Gathering

1. How has knowledge obtained through information gathering activities been used to design the Tolman High School Program implementation and operation activities?

variables: differences between the Shea and Tolman High School's ACPPE implementation and operation strategies

data sources: project documentation and project staff

data collection procedures: observation and informal
interview protocol

The knowledge and experiences attained from the ACPPE's two years of operation at the Shea High School have been instrumental in the development of the Tolman High School program. As the data analysis indicates, the Tolman program has achieved statistical and educational significance in terms of physical performance analogous to the Shea program's achievement.

On the other hand, there is greater acceptance of the program at the Shea school. Data analysis of the Edgington Attitudinal Scale matched pre and posttest scores is statistically significant for the program at the Shea school but not for the Tolman school's program. A closer examination of the sign test results, however, show that 30 percent of the Shea students' attitudes improved while 32.5 percent of the Tolman students improved their attitudes. Since the Tolman program was initiated this school year (1979-80), it is anticipated that as the Tolman program matures students' attitudes toward PE activities will become increasingly positive.

2. To what extent do the problems of the program require information for decision-making? Choices? Solutions?

variables: descriptions of the kinds of problems encountered
and probable solution requirements

data sources: project documentation and informal staff interviews

data collection procedures: review of project documentation and
informal interview protocol

The program has had some difficulty in obtaining the Physician's Recommendation Form (Appendix B) necessitating contact and dialogue with the interested

parties. This information is necessary for program eligibility and admittance as well as decision-making, and choice and solution determination. When needed the program staff has initiated and maintained contact with the appropriate medical personnel and vigilantly pursued the required information and professional input regarding program alternatives and choices for individual students.

3. Is the information obtained comprehensive and adequate enough to provide the data upon which decisions can be based?

variables: kinds of information gathering mechanisms and use of information gathered

data sources: project documentation and staff

data collection procedures: review of documentation and informal interview protocol

Yes, the information that the project has sought and obtained has been comprehensive and adequate and has provided credible data upon which decisions have been based. Evidence of this judgment is based on student achievement and the project's objectives based accomplishments.

E. Cooperation/Collaboration

1. What has been the effectiveness of activities designed to foster increased cooperation and collaboration among the various groups (i.e., participants) involved in the program?

variables: medical referral process, prescribed modified and corrective exercise program and classroom environment and attitudes toward the ACPPE

data sources: project documentation and observation

data collection procedures: review of documentation, classroom observations and informal interview protocol

Review of project documents and correspondence with medical professionals and agencies indicate that the ACPPE has been effective in fostering cooperation and collaboration among the various groups involved in the program. In the final analysis, it is the classroom environment which is paramount in any such determination. This evaluator has observed several ACPPE classes and found the goals and objectives of the program distinctly visible and operable in the classroom environment. Students are allowed to work at their own pace and they do so in an orderly and knowledgeable manner. Peer student assistance and assistance from the program teacher and teacher-aide provided constant encouragement and support to the student participants.

2. To what extent do program activities promote establishment or incorporation of the program into the continuous physical education activities of the District?

variables: impact of the ACPPE upon the extant physical education program, including the Tolman implementation process design

data sources: project documentation and Pawtucket School Department physical education teachers

data collection procedures: review of documentation and informal interview protocol

The ACPPE has established itself as a vital component of the Pawtucket School Department's physical education curriculum. The successful implementation of the program at Tolman High School this year (1979-80) is tangible evidence of the program's incorporation into the continuous physical education activities of the district. The program provides a needed alternative to the required PE program. In addition, other physical education teachers expressed positive and encouraging attitudes toward the program design, implementation, operation and outcomes.

3. To what extent do the district's leaders and program participants support the goals and objectives of the program?

variables: degree of support for the ACPPE among key school department personnel

data sources: Pawtucket School Department personnel

data collection procedures: informal interview protocol

As described above, the student participants, physical education teachers and school administrators have vocalized support and encouragement for the goals and objectives of the program. Thus, there is a great degree of support for the continuation of the program after the availability of outside funding eligibility. Further, there is an interest in the appropriateness and ability to expand the ACPPE to provide for the junior high school level students with disabilities that preclude their participation in the regular (required) junior high school PE curriculum. Such an expansion is just conjecture at this time, however, it indicates the support and favorable acceptance of the program within the district.

F. Additional Assessment of Program Activities Concerns

1. What suggestions do participants give for improving the program?

variables: suggestions regarding screening, placement and scheduling activities

data source: student participants

data collection procedure: student participant interview protocol

The students did not offer any suggestions for improving the program. This appears to be connected to the high degree of satisfaction with the ACPPE among the participants.

2. How do participants rate the program as compared to the regular physical education program?

variables: utility of the adopted program as compared to the regular physical education program

data source: student participants

data collection procedure: student participant interview protocol

As reported above, 96 percent of the respondents rated their APE experiences from six to ten (ten being the highest rating) while 63 percent rated the regular PE experiences from six to ten on the rating scale. Furthermore, 75 percent of the respondents rated their APE experiences from eight to ten as opposed to 30 percent of the respondents rating their regular PE activities from eight to ten on the rating scale. The ACPPE participants, then, rated the adaptive program considerably higher than their previous regular PE experiences.

3. How have the participants' self-attitudes been influenced by their involvement in the program?

variables: description of student attitudes toward physical education, their own training program and themselves

data source: student participants

data collection procedures: student participant interview protocol

It is extremely difficult to judge the degree of change in participants' self-attitudes since a systematic assessment of this variable was not undertaken as a component of this evaluation. Taken together the t-test and sign test results of the AAHPERD Youth Fitness Test and the Edgington Attitudinal Scale, and the student interviews indicate that a positive influence can be attributed to the ACPPE. Many of the students interviewed expressed satisfaction with the program activities and the effect of the activities upon their performance

abilities. It would appear that there is a connection between the established improvement and the participants' self-attitudes but to be definitive a more systematic examination of this variable would be necessary.

Chapter V

Conclusions and Recommendations

A. Synopsis of Major Findings

The ACPPE has, in accordance with the Education for all Handicapped Children Act (PL94-142) USDHEW, 1976, developed an Individual Education Program (IEP) for each of the program participants.⁸ The IEP contains:

- 1) a data base, the physician's diagnostic recommendation and exercise prescription information, which provides information about the strengths and weaknesses (needs and limitations) of each student;
- 2) goals and objectives for the student, which are derived from the data base;
- 3) a listing of the adapted and corrective exercises and activities to be provided for the student; and
- 4) criteria for monitoring progress toward goals and objectives.

The program's two overarching purposes and the four major objectives, and one sub-objective have been successfully achieved. The ACPPE has identified those Shea and Tolman High School students who have physical (medical) problems that preclude their participation in the required PE curriculum and has designed and delivered a program of modified physical education activities to meet these students' needs in accordance with the IEP data base developed for each of the participants. Analysis and interpretation of the AAHPERD Youth Fitness Test subscale categories and the Edgington Attitudinal Scale matched pre- and posttest scores using the t-test for non-independent samples and the sign test provide strong and convincing evidence of the statistical and educational significance of the program's activities as well as the benefits that the student participants have received as a result of the ACPPE.

⁸ Maher, C.A., "Evaluation in Special Education" in Evaluation News, Number II, Spring, 1979, p. 2.

The program participants rated their APE experiences considerably higher than their previous regular PE experiences. That is, on a scale of 1 (low) to 10 (high); 75 percent of the students' responses rated their APE experiences from eight to ten on the rating scale as opposed to the 30 percent of the respondents who rated their previous PE experiences from eight to ten on the rating scale. Student comments were equally favorable toward the ACPPE. In addition, analysis and interpretation of the Edgington Attitudinal Scale scores illustrates statistically significant improvement for the Shea school's participants and educational significance for both the Shea and Tolman schools' participants' attitudes toward physical education.

The ACPPE has established itself as a vital component of the Pawtucket School Department's physical education curriculum. The successful implementation of the program at Tolman High School this year (1979-80) is tangible evidence of the program's incorporation into the continuous physical education activities of the district. The program is providing a needed alternative to the required PE program. In addition, school administrators and other physical education teachers have expressed positive and encouraging attitudes toward the ACPPE's design, implementation, operation, and the student outcomes.

It is the evaluators opinion that the ACPPE has provided results that could not otherwise be achieved. Students who would not have the opportunity or the impetus to take part in physical activities of any kind without the availability of this program have been significantly and positively effected by the program. A majority of the student participants have improved their physical stamina and abilities as well as their attitudes toward PE. Students voiced appreciation for the non-competitive, individual attention they received in the program in addition to the physical improvement many of them have achieved.

The student participants almost unanimously (95 percent) indicated that they would recommend the adaptive program for other students. Thus, students are aware of the programs' efficacy for others as well as for themselves. In conclusion, there does not appear to be any alternative to this program that would be capable of providing similar programmatic alternatives or student outcomes.

B. Implications for Future Program Development

The evaluation study of the 1979-80 ACPPE suggests the following implications for future program development:

1. Several of the program participants interviewed expressed favorable attitudes toward the non-competitive atmosphere of the ACPPE. The students stated that in the required PE program they were competing against each other and they did not feel comfortable or adequate in such a performance oriented environment. This is an important feature of the adaptive program and should be given careful attention in the future.

Students struggling to improve their own abilities in a program such as the ACPPE should be encouraged to focus on competing with themselves. Specifically, the only performance that the student should strive to surpass is his or her own previous performance.

Thus, the ACPPE should consciously attempt to augment both the self-competitive program environment and student attitudes whenever possible.

2. In addition to the students' attitudes toward PE there is some interest in the ACPPE's ability to improve self-attitudes. Although

it appears that there is a connection between the participants' physical improvement and self-attitudes; a more systematic examination of this variable is necessary to definitively attribute self-attitude improvement to the ACPPE.

Chapter VI

Executive Summary

A total of five hundred and three students have participated in the ACPPE over the three years the program has operated, 1977 through 1980. Of the two hundred and forty-three 1977-78 participants thirty-five were full-time (all year) participants and two hundred and eight were temporary or transient participants. One hundred and fifty students, eighty-one full-time and sixty-nine transient, participated during 1978-79. Since thirty-five of the full-time participants in the 1978-79 program had also participated in the 1977-78 program forty-six additional full-time students joined the ACPPE during 1978-79. A total of fifty-nine additional full-time students joined the program this 1979-80 school year; nineteen at Shea and forty at Tolman High Schools, respectively. Again, the 1979-80 enrollment totaled one hundred and ten full-time student participants, seventy at Shea High School and forty at Tolman High School.

The ACPPE staff is comprised of two co-directors and a teacher aide. These three educators were hired in accordance with the 1977-78 program proposal and have remained with the program since its implementation. (The teacher aide has recently left the program.)

Each student's program of modified and remedial activities has been based on the physician's recommendation form and many physicians have provided more detailed information and instructions written on their prescription (R_x) note paper. Depending upon the physician's recommendations, a wide spectrum of PE activities are available to the ACPPE participants ranging from mild activities, e.g., table games, and archery to strenuous activities, e.g., tumbling and

tennis. The teaching methodology is individualized and it complements the individualized curriculum with a flexibility which allows for the identification and care of each student's needs.

Analysis and interpretation of the AAHPERD Youth Fitness Test subscale categories and the Edgington Attitudinal Scale matched pre- and posttest scores using the t-test for non-independent samples and the sign test provide strong and convincing evidence of the statistical and educational significance of the program's activities as well as the benefits that the student participants have received as a result of their efforts. The program participants rate their ACPPE experiences considerably higher than their previous (required) PE program experiences. Additionally, school administrators and other physical education teachers have expressed positive and encouraging attitudes toward the ACPPE.

The continued application and participation of the student to the program of adaptive physical education activities is, in some of the cases, as significant as positive physical improvement on any of the skill development tasks. The reason for this is that many of the ACPPE participants would not have the opportunity or the impetus to become engaged in any physical activity without the availability of this program.

It is the evaluator's opinion that the ACPPE has provided results that could not otherwise be achieved. A majority of the student participants have been positively and significantly effected by their participation in the ACPPE. These students have improved their physical stamina, abilities and attitudes toward PE. Students voiced appreciation for the non-competative atmosphere the program provides and the individual attention they have received in the program in addition to the physical improvement many of them have achieved. Finally 95 percent of the students interviewed stated that they would recommend the

ACPPE to other students indicating an awareness of the program's efficacy for others as well as for themselves.

After reviewing the ACPPE's past three years of operation, 1977 through 1980, two recommendations for future program development have been offered. First, the ACPPE should consciously attempt to augment the non-competitive program environment while simultaneously augmenting self-competitive student attitudes. Second, in order to definitively attribute students' self-attitude improvement to ACPPE participation; a systematic examination of this variable with a pre- and posttest design should be investigated.

In conclusion, the ACPPE has proven to be an effective programmatic alternative to the district's required PE curriculum. The program has successfully achieved its stated purposes and objectives. Additionally, the program has successfully achieved the non-quantifiable outcomes of improved student-peer and student-teacher rapport, and enhanced school-community relationships.

Appendices

- A. Program Introductory Letter
- B. Program Activities Recommendation Form

Appendix A

SHEA SENIOR HIGH SCHOOL
458 EAST AVENUE
PAWTUCKET, RHODE ISLAND 02860

To whom it may concern:

This letter is in regard to an Adaptive and Corrective Program in Physical Education being conducted at Shea Senior High School and Tolman High School as a Pilot Program under the auspices of the U. S. Federal Government, Rhode Island Department of Education and the Pawtucket School Department. This Program consist of prescribed adaptive activities and exercises to meet the special needs of the students and also where possible, to aid in the correction of certain postural deviations.

In order for this program to be successful we, the Physical Education Department and students, need the cooperation and assistance of the physicians in the community and State. Several students who could be benefiting from this program have been unable to participate because of difficulty in obtaining the required recommendations from his or her physician.

We would appreciate your review of the enclosed recommendation form which we require completed before a student can participate in our Program.

Very truly yours,
Physical Education Department

Appendix B

SHEA SENIOR HIGH SCHOOL
458 EAST AVENUE
PAWTUCKET, RHODE ISLAND 02860

PHYSICIAN'S RECOMMENDATIONS FOR _____ of
_____ High School.

Please advise which activities and/or exercises you recommend for this student's condition. _____

<u>TYPE OF EXERCISE</u>	<u>MILD</u>	<u>MODERATE</u>	<u>UNLIMITED</u>	<u>OMIT</u>
ABDOMINAL	_____	_____	_____	_____
ARM	_____	_____	_____	_____
BREATHING	_____	_____	_____	_____
FOOT	_____	_____	_____	_____
HEAD	_____	_____	_____	_____
KNEE	_____	_____	_____	_____
LEG	_____	_____	_____	_____
RELAXATION	_____	_____	_____	_____
TRUNK	_____	_____	_____	_____

Please check generally and individually the type of Physical Education which you would recommend for this student.

MILD ()

() BADMINTON
() CORRECTIVE EXERCISE
() THROWING - CATCH
() THROWING AT TARGET
() TABLE GAMES
() GOLF PRACTICE
() ARCHERY
() MILD FOLK DANCE
() SHUFFLE BOARD
() TABLE TENNIS
() SWIM

MODERATE ()

() TABLE TENNIS
() VOLLEYBALL
() FOLK DANCE
() CORRECTIVE EXERCISE
() SOFTBALL
() APPARATUS
() JOGGING
() GOLF
() TENNIS PRACTICE
() BADMINTON
() SWIM

STRENUOUS ()

() BASKETBALL
() TUMBLING
() APPARATUS
() SOCCER
() SPEEDBALL
() RUNNING
() TENNIS
() BADMINTON
() FIELD HOCKEY
() SWIM

(Signature of Physician)